Fig. 1 PRIOR ART

COMPRESSION PROCESSING

DI → DCT TRANSFORMATION → QUANTIZATION

ENTROPY COMPRESSION

CODING OF DC COMPONENT (HUFFMAN CODE)

CODING OF DC COMPONENT

ADDITION OF EACH MARKER → DJ

EXPANSION PROCESSING

DETECTION OF EACH MARKER

ENTROPY EXPANSION

DECODING OF DC COMPONENT (HUFFMAN CODE)

DECODING OF DC COMPONENT

REVERSE QUANTIZATION → REVERSE DCT TRANSFORMATION → DR

Fig. 2A PRIOR ART

ORIGINAL IMAGE DATA → Y Cb Cr

SAMPLE RATIO 4:1:1

☐ 8×8 PIXELS=BLOCK

Fig. 2B PRIOR ART
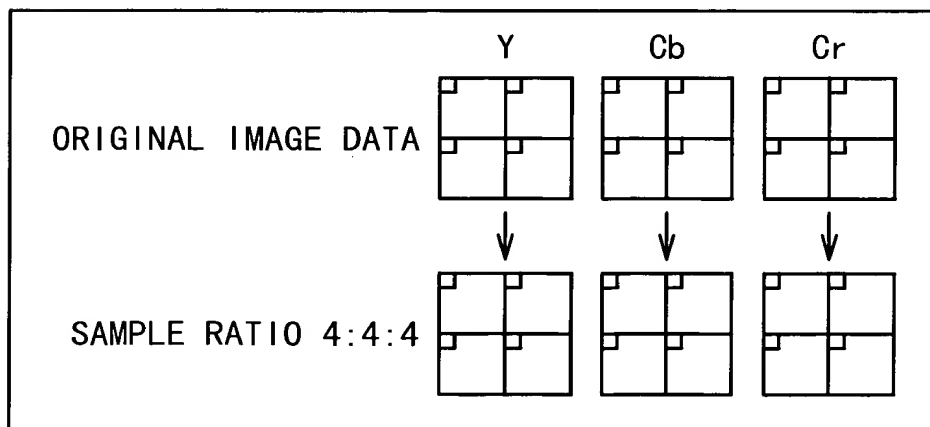
ORIGINAL IMAGE DATA → Y Cb Cr

SAMPLE RATIO 4:4:4

☐ 8×8 PIXELS=BLOCK

Fig. 3A
PRIOR ART

IMAGE

Fig. 3B
PRIOR ART

DC COEFFICIENT

AC COEFFICIENT

8 × 8 PIXELS=BLOCK
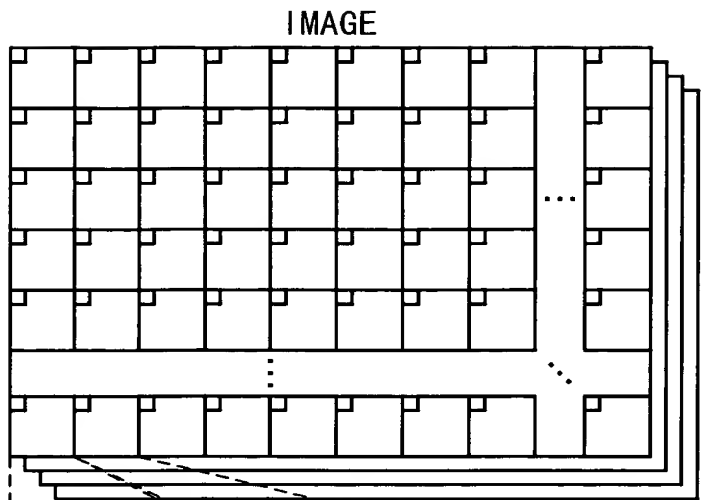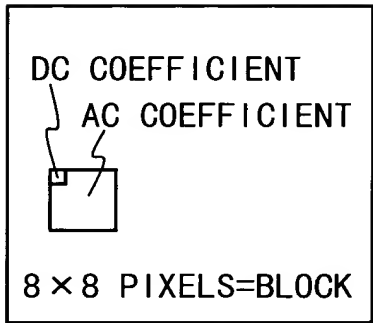
EACH ELEMENT
SAMPLE RATIO 4:4:4

DIFFERENTIAL VALUE

①	2	6	7	15	16	28	29
3	5	8	14	17	27	30	43
4	9	13	14	26	31	42	44
10	12	19	25	32	41	45	54
11	20	24	33	40	46	53	55
21	23	34	39	47	52	56	61
22	35	38	48	51	57	60	62
36	37	49	50	58	59	63	64

①	2	6	7	15	16	28	29
3	5	8	14	17	27	30	43
4	9	13	18	26	31	42	44
10	12	19	25	32	41	45	54
11	20	24	33	40	46	53	55
21	23	34	39	47	52	56	61
22	35	38	48	51	57	60	62
36	37	49	50	58	59	63	64

Fig. 3C
PRIOR ART

Fig. 3D
PRIOR ART

Fig. 4A PRIOR ART

8bit

| RSTn |

RSTn (RST 0〜7)

0×FF 0×D0
〜
0×D7

Fig. 4B PRIOR ART

8bit

| DRl | Lr | Ri |

0×FF 0×D0 0×00 0×04 0×00 0×00
〜
0×FF 0×FF
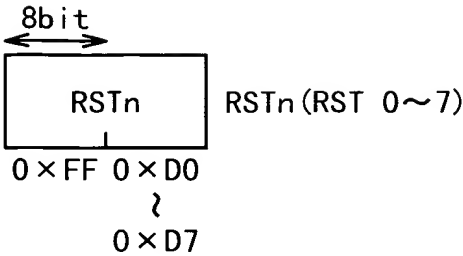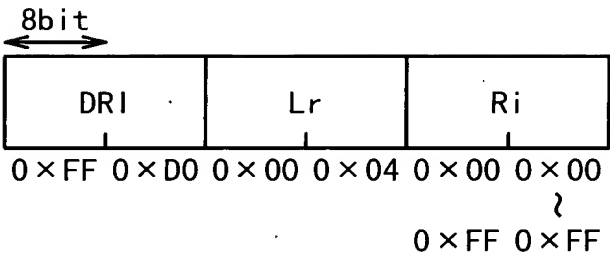
Fig. 4C PRIOR ART

[0]〜[7] : RST0〜7

Fig. 5 PRIOR ART

Fig. 6 PRIOR ART

IMAGE
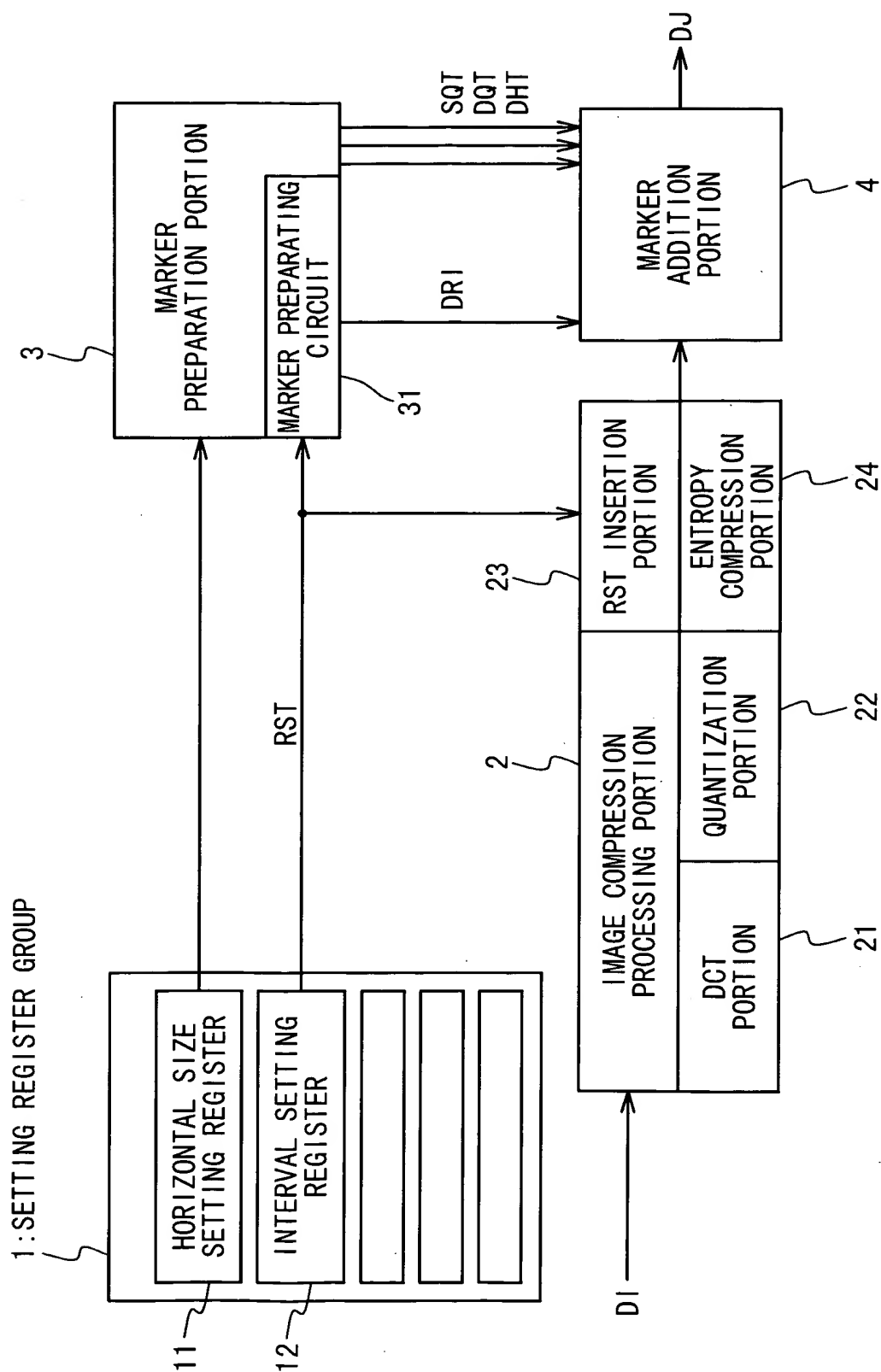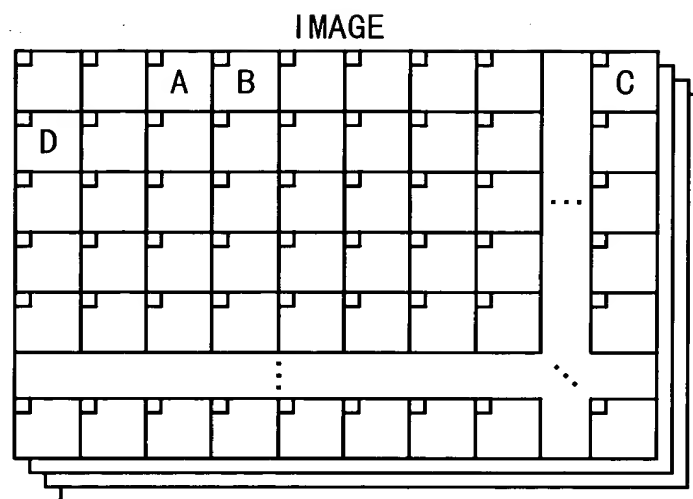
CORRELATION OF DC COEFFICIENT

A, B : HIGH CORRELATION
C, D : LOW CORRELATION

Fig. 7

Fig. 8A

0 ~ 7 : RST0~7

Fig. 8B

0 ~ 7 : RST0~7

Fig. 9

```
        ( START )
            │
┌───────────────────────────┐
│      SET EACH REGISTER     │
│  ┌─────────────────────┐   │
│  │ IMAGE HORIZONTAL SIZE│   │ ──S1
│  │ SETTING REGISTER (H) │   │
│  └─────────────────────┘   │
│  ┌─────────────────────┐   │
│  │ RESTART LINE INTERVAL│   │
│  │ SETTING REGISTER (L) │   │
│  └─────────────────────┘   │
└───────────────────────────┘
            │
┌───────────────────────────┐
│         MCU UNIT           │
│   RESTART LINE INTERVAL    │ ──S2
│       CALCULATION          │
│   ⎛  H ÷ Mh = Hn  ⎞         │
│   ⎝  Hn × L = Ri  ⎠         │
└───────────────────────────┘
            │
┌───────────────────────────┐
│    PREPARE EACH MARKER     │
│  ┌─────────────────────┐   │
│  │        DRI          │   │
│  └─────────────────────┘   │ ──S3
│  ┌─────────────────────┐   │
│  │        SQT          │   │
│  └─────────────────────┘   │
│  ┌─────────────────────┐   │
│  │        DRI          │   │
│  └─────────────────────┘   │
│  ┌─────────────────────┐   │
│  │        DRI          │   │
│  └─────────────────────┘   │
└───────────────────────────┘
            │
┌───────────────────────────┐
│   INCORPORATE IMAGE DATA   │ ──S4
└───────────────────────────┘
            │
┌───────────────────────────┐
│           DCT              │ ──S5
└───────────────────────────┘
            │
┌───────────────────────────┐
│       QUANTIZATION         │ ──S6
└───────────────────────────┘
            │
┌───────────────────────────┐
│       RST INSERTION        │ ──S7
└───────────────────────────┘
            │
┌───────────────────────────┐
│      ADD EACH MARKER       │
│            SQT             │ ──S8
│            DQT             │
│            DHT             │
│            DRI             │
└───────────────────────────┘
            │
        (  END  )
```
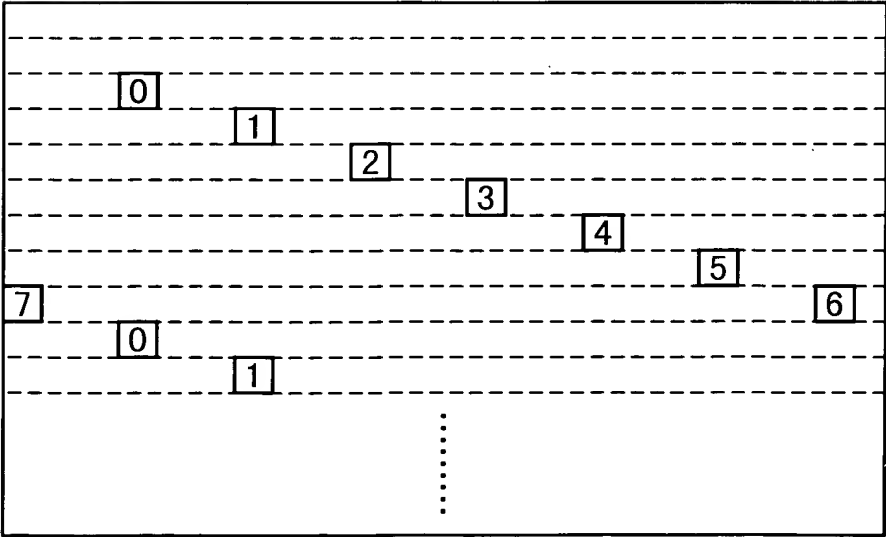
MCU UNIT RESTART LINE INTERVAL CALCULATION

$$H \div Mh = Hn$$
$$Hn \times L = Ri$$